

# Economic analysis of service and delivery interventions in health care

Matt Sutton,<sup>1\*</sup> Steph Garfield-Birkbeck,<sup>2</sup>  
Graham Martin,<sup>3</sup> Rachel Meacock,<sup>1</sup> Stephen Morris,<sup>4</sup>  
Mark Sculpher,<sup>5</sup> Andrew Street,<sup>6</sup> Samuel I Watson<sup>7</sup>  
and Richard J Lilford<sup>7</sup>

<sup>1</sup>School of Health Sciences, University of Manchester, Manchester, UK

<sup>2</sup>National Institute for Health Research Evaluation Trials and Studies Coordinating Centre, University of Southampton, Southampton, UK

<sup>3</sup>Department of Health Sciences, University of Leicester, Leicester, UK

<sup>4</sup>Department of Applied Health Research, University College London, London, UK

<sup>5</sup>Centre for Health Economics, University of York, York, UK

<sup>6</sup>Department of Health Policy, London School of Economics, London, UK

<sup>7</sup>Warwick Medical School, University of Warwick, Coventry, UK

\*Corresponding author [Matt.Sutton@manchester.ac.uk](mailto:Matt.Sutton@manchester.ac.uk)

**Declared competing interests of authors:** Matt Sutton reports grants from the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) Greater Manchester and is deputy chairperson of the NIHR Health Services and Delivery Research (HSDR) Board. He is also a NIHR senior investigator. Graham Martin is part funded/supported by the NIHR CLAHRC East Midlands and is a member of the NIHR HSDR Evidence Synthesis Sub Board and the NIHR Health Technology Assessment (HTA) programme National Stakeholder Advisory Group. Stephen Morris is part funded/supported by the NIHR CLAHRC North Thames at Bart's Health NHS Trust and is a member of the NIHR HSDR Board and the NIHR HSDR Evidence Synthesis Sub Board. Samuel I Watson and Richard J Lilford are both part funded/supported by the NIHR CLAHRC West Midlands. Mark Sculpher is a NIHR emeritus senior investigator and a member of the Medical Research Council Methodology Research Programme Advisory Group. Steph Garfield-Birkbeck is an assistant director at the NIHR Evaluation, Trials and Studies Coordinating Centre at the University of Southampton and is a member of the NIHR HSDR programme and HTA programme secretariats. Rachel Meacock is an associate member of the NIHR HSDR Board. Andrew Street served as a member of the NIHR HSDR board until January 2017.

**Disclaimer:** This publication is linked to a series of essays published by the National Institute for Health Research Journals Library in 2016 [Raine R, Fitzpatrick R, Barratt H, Bevan G, Black N, Boaden R, *et al.* Challenges, solutions and future directions in the evaluation of service innovations in health care and public health. *Health Serv Deliv Res* 2016;**4**(16)].

Published February 2018

DOI: 10.3310/hsdr06050

## Scientific summary

### **Economic analysis of service and delivery interventions in health care**

Health Services and Delivery Research 2018; Vol. 6: No. 5

DOI: 10.3310/hsdr06050

NIHR Journals Library [www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)

## Scientific summary

Health economists consider a variety of topics and this includes the demand for care, the supply of services, the relationship between demand and supply, the efficiency and equity of service provision and resource allocation, and the evaluation of clinical and service interventions, policy initiatives and wholesale health system reorganisations. Health economists have developed a wide range of techniques for economic evaluation of the relative costs and benefits of clinical interventions, but they also have an important role to play in understanding and evaluating service interventions. Although not different in principle from other forms of intervention, there are a number of distinctive issues that come to the fore with service interventions, including dealing with non-randomised study designs, diffuse effects, wider system impacts, and heterogeneity in implementation and impacts. Recent developments include methods to produce aggregate estimates of programme impacts on patient health before and after introduction, measure patient and professional preferences, and capture opportunity costs. Alongside evidence on relative costs and benefits to inform decision-making, there is an important role for descriptive economic analysis of service interventions to produce generalisable learning about the mechanics of the care system. Future work should focus on producing evidence on cost-effectiveness, increasing our understanding of the production process and the behaviour of agents in care systems, and contributing to interdisciplinary process and outcome evaluations.



# Health Services and Delivery Research

ISSN 2050-4349 (Print)

ISSN 2050-4357 (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) ([www.publicationethics.org/](http://www.publicationethics.org/)).

Editorial contact: [journals.library@nihr.ac.uk](mailto:journals.library@nihr.ac.uk)

The full HS&DR archive is freely available to view online at [www.journalslibrary.nihr.ac.uk/hsdr](http://www.journalslibrary.nihr.ac.uk/hsdr). Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: [www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)

## Criteria for inclusion in the *Health Services and Delivery Research* journal

Reports are published in *Health Services and Delivery Research* (HS&DR) if (1) they have resulted from work for the HS&DR programme or programmes which preceded the HS&DR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

## HS&DR programme

The Health Services and Delivery Research (HS&DR) programme, part of the National Institute for Health Research (NIHR), was established to fund a broad range of research. It combines the strengths and contributions of two previous NIHR research programmes: the Health Services Research (HSR) programme and the Service Delivery and Organisation (SDO) programme, which were merged in January 2012.

The HS&DR programme aims to produce rigorous and relevant evidence on the quality, access and organisation of health services including costs and outcomes, as well as research on implementation. The programme will enhance the strategic focus on research that matters to the NHS and is keen to support ambitious evaluative research to improve health services.

For more information about the HS&DR programme please visit the website: <http://www.nets.nihr.ac.uk/programmes/hsdr>

## This report

This report is the 9th essay of the HS&DR report "Challenges, solutions and future directions in the evaluation of service innovations in health care and public health" <https://www.journalslibrary.nihr.ac.uk/hsdr/hsdr04160/#/abstract>. The first version of the report was the output from a meeting in London in June 2015 and the subsequent management of the proceedings funded by The Health Foundation, The Medical Research Council, the National Institute for Health Research and Universities UK. It began editorial review in November 2015 and was accepted for publication in March 2016. The additional chapter is the result of a roundtable meeting in February 2017 funded by the National Institute for Health Research and the Medical Research Council. The authors of the whole report have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HS&DR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent work and the views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health.

**© Queen's Printer and Controller of HMSO 2018. This work was produced by Sutton *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.**

Published by the NIHR Journals Library ([www.journalslibrary.nihr.ac.uk](http://www.journalslibrary.nihr.ac.uk)), produced by Prepress Projects Ltd, Perth, Scotland ([www.prepress-projects.co.uk](http://www.prepress-projects.co.uk)).

## **Health Services and Delivery Research Editor-in-Chief**

**Professor Jo Rycroft-Malone** Professor of Health Services and Implementation Research, Bangor University, UK

## **NIHR Journals Library Editor-in-Chief**

**Professor Tom Walley** Director, NIHR Evaluation, Trials and Studies and Director of the EME Programme, UK

## **NIHR Journals Library Editors**

**Professor Ken Stein** Chair of HTA and EME Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

**Professor Andrée Le May** Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals)

**Dr Martin Ashton-Key** Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

**Professor Matthias Beck** Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

**Dr Tessa Crilly** Director, Crystal Blue Consulting Ltd, UK

**Dr Eugenia Cronin** Senior Scientific Advisor, Wessex Institute, UK

**Dr Peter Davidson** Director of the NIHR Dissemination Centre, University of Southampton, UK

**Ms Tara Lamont** Scientific Advisor, NETSCC, UK

**Dr Catriona McDaid** Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

**Professor William McGuire** Professor of Child Health, Hull York Medical School, University of York, UK

**Professor Geoffrey Meads** Professor of Wellbeing Research, University of Winchester, UK

**Professor John Norrie** Chair in Medical Statistics, University of Edinburgh, UK

**Professor John Powell** Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

**Professor James Raftery** Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

**Dr Rob Riemsma** Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

**Professor Helen Roberts** Professor of Child Health Research, UCL Institute of Child Health, UK

**Professor Jonathan Ross** Professor of Sexual Health and HIV, University Hospital Birmingham, UK

**Professor Helen Snooks** Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

**Professor Jim Thornton** Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

**Professor Martin Underwood** Director, Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of members of the NIHR Journals Library Board:  
[www.journalslibrary.nihr.ac.uk/about/editors](http://www.journalslibrary.nihr.ac.uk/about/editors)

**Editorial contact:** [journals.library@nihr.ac.uk](mailto:journals.library@nihr.ac.uk)